

**Tune diagrams**  
for U28+ at nominal fast extraction parameters  
(0.3 max. SC tune shift)

- Simulated 160k turns
- Fixed frozen SC
- Black contour represents low-loss area with <5% particles lost during 160k turns
- Resonance lines without intensity effects:
  - Grey – random
  - Red – systematic
  - Solid – upright/normal
  - Dashed – skew

- Result:
- Large low-loss areas close to designated fast and slow extraction WP
  - Further large low-loss areas around
    - (16.15, 16.25)
    - (20.15, 20.30)

